

Notice of Allowability

Application No.

09/973,498

Examiner

John T. Haran

Applicant(s)

CHAUDHURY ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 11/24/03.
2. ☒ The allowed claim(s) is/are 2-18,20-27,29 and 31-35.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 11/24/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 4/28/04
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Catherine Brown on 4/28/04.

3. The application has been amended as follows:

In The Claims:

Amend claim 26 to read:

26. A method comprising:

A) plasma treatment of a polymeric material for up to about 30 seconds,

B) plasma treatment of an adherend for a period greater than 30 seconds and up to about 30 minutes, and

C) thereafter contacting the polymeric material and the adherend;

thereby creating adhesion of the polymeric material and the adherend.

4. Claims 2-18, 20-27, 29, and 31-35 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Regarding claim 14, the prior art of record fails to suggest the claimed method wherein the polymeric material is a cured silicone resin, a cured silicone elastomer, or a cured silicone rubber. It is known to plasma treat such silicone materials however there

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is no suggestion to do so in combination with plasma treating an adherend and then contacting the two plasma treated surfaces.

Regarding claim 26, the prior art of record fails to suggest the claimed method of plasma treating the polymeric material for up to 30 seconds and the adherend for a period of greater than 30 seconds and up to about 30 minutes. Chou et al teach the polymer bodies can be plasma treated from 0.1 minutes to an hour or more but provides no suggestion of plasma treating one for 30 seconds and the second for greater than 30 seconds and up to about 30 minutes.

Regarding claim 27, the prior art of record fails to suggest the claimed method of carrying out the plasma treatment with a gas comprising air, argon, carbon dioxide, helium, nitrogen, nitrous oxide, ozone, or combinations thereof. Chou et al is specifically directed to using water vapor as the plasma gas and provides no suggestion of using any other type of gas.

Regarding claim 29, the prior art of record fails to suggest the claimed method wherein the substrate comprises ceramic. It is known to plasma treat such ceramic materials however there is no suggestion to do so in combination with plasma treating an adherend and then contacting the two plasma treated surfaces.

Regarding claim 31, the prior art of record fails to suggest the claimed method of plasma treating a semiconductor and contacting it with a plasma treated polymeric material to adhere the two together.

Dery et al (U.S. Patent 6,074,895) teaches plasma treating an IC chip and a chip carrier in order to enhance adhesion of the IC chip and the chip carrier with an

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encapsulant (See abstract). There is no suggestion of plasma treating the encapsulant or for the plasma treated polymeric passivation layer of the chip to contact and adhere to the plasma treated surface of the chip carrier.

Yew et al (U.S. Patent 6,602,803) teaches plasma treating a protective polymer layer on a chip and directly attaching it to a substrate. There is no suggestion of plasma treating the substrate or towards plasma treating the chip surface or protective polymer layer before applying the protective polymer layer to the chip surface.

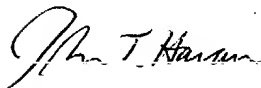
6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is **(571) 272-1217**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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